



Patent

Attorney Docket: 612,404-430

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Donald E. Ackley et al.

Serial No.: 10/686,440

Filed: October 14, 2003

For: **MULTI-CHAMBERED ANALYSIS DEVICE**

Group Art Unit: 1631

Examiner: A. Marschel

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. §1.56 and in accordance with 37 C.F.R. §§1.97–1.98, information relating to the above-identified application is hereby disclosed. The accompanying Form PTO SB/08A provides a listing of documents that may be relevant to the subject application.

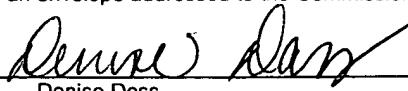
It is requested that the Examiner fully consider the art cited in the accompanying Form PTO SB/08A, initial the left-most column of the form adjacent each cited reference, and return a copy for Applicants' records. It is further requested that the art be cited on the cover of any patent issuing from the subject application.

CERTIFICATE OF MAILING (37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Arlington, VA 22313-1450.

11-5-03

Date of Deposit



Denise Doss

In accordance with §1.97(b), this Information Disclosure Statement is being filed before the mailing of a first Office Action on the merits of the above-identified application, and therefore no fee is required. If a first Office Action has been mailed, then please enter this Information Disclosure Statement and charge Deposit Account No. 50-2862 for any necessary fees.

In accordance with §1.98(d), copies of the references listed on the attached Form PTO/SB/08A are not enclosed herewith because they were previously cited or submitted to the Patent and Trademark Office in prior Application Serial No. 09/204,324 for which a claim for priority under 35 U.S.C. §120 has been made in the instant application. Accordingly, Applicants will provide duplicate copies in respect of the present case only if the Examiner so desires.

This statement should not be construed as a representation that more material information does not exist or that an exhaustive search of the relevant art has been made. Nor does this statement constitute an admission by Applicants or Applicants' agent that the information provided herein is necessarily prior art to Applicants' invention.

Patent
Attorney Docket: 612,404-430

Moreover, Applicants reserve the right to establish the patentability of the claimed invention over any of the listed documents should they be applied there—against as references. Please charge any deficiency or credit any overpayment to Deposit Account No. 50-2862.

Respectfully submitted,

O'MELVENY & MYERS LLP

By: 

Michael S. Davidson
Reg. No. 43,577
Attorneys for Applicant

MSD/dnd
Customer No.
34263
PATENT TRADEMARK OFFICE

O'Melveny & Myers LLP
114 Pacifica, Suite 100
Irvine, CA 92618-3315
(949) 737-2900

NOV 10 2003
CITE
PATENT & TRADEMARK OFFICE
Please type a plus sign (+) inside this box →

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

6

Complete if Known

Application Number	10/686,440
Filing Date	October 14, 2003
First Named Inventor	Donald E. Ackley et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	612404-430

Examiner Initials *	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
	Number	Kind Code ² (if known)		
	US-3346479		Natelson	10/10/67
	US-3375187		Buchler	03/26/68
	US-3533393		Strauch	10/13/70
	US-3539493		Dorman	11/10/70
	US-3616454		Levy et al	10/26/71
	US-3627137		Bier	12/14/71
	US-3640813		Nerenberg	02/08/72
	US-3697405		Butter et al	10/10/72
	US-3773648		Van Welzen et al	11/20/73
	US-3791950		Allington	02/12/74
	US-3902986		Nees	09/02/75
	US-3950738		Hayashi et al	04/13/76
	US-3980546		Caccavo	09/14/76
	US-3995190		Salgo	11/30/76
	US-4111785		Roskam	09/05/78
	US-4283773		Daughton et al	08/11/81
	US-4326934		Pohl	04/27/82
	US-4479861		Hediger	10/30/84
	US-4563419		Ranki et al	01/07/86
	US-4580895		Patel	04/08/86
	US-4584075		Goldstein et al	04/22/86
	US-4594135		Goldstein	06/10/86
	US-4617102		Tomblin et al	10/14/86
	US-4699706		Burd et al	10/13/87
	US-4731325		Palva et al	03/15/88
	US-4737259		Ogawa et al	04/12/88
	US-4751177		Stabinsky	06/14/88
	US-4787963		MacConnell	11/29/88
	US-4807161		Comfort et al	02/21/89
	US-4816418		Mack et al	03/28/89
	US-4822566		Newman	04/18/89
	US-4828979		Klevan et al	05/09/89
	US-4877510		Chen	10/31/89
	US-4881107		Matsushita	11/14/89
	US-4908112		Pace	03/13/90
	US-4936963		Mandecki et al	06/26/90
	US-5039386		Margolis	08/13/91
	US-5063081		Cozzette et al	11/05/91
	US-5074977		Cheung et al	12/24/91
	US-5075077		Durley III et al	12/24/91
	US-5078853		Manning et al	01/07/92
	US-5080770		Culklin	01/14/92
	US-5082548		Faupel et al	01/21/92
	US-5085756		Swedberg	02/04/92
	US-5096669		Lauks et al	03/17/92
	US-5096807		Leaback	03/17/92
	US-5114674		Stanbro et al	05/19/92

NOV 10 2003
U.S. TRADEMARK
Please type a plus sign (+) inside this box →

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

2

of

6

Complete if Known

Application Number	10/686,440
Filing Date	October 14, 2003
First Named Inventor	Donald E. Ackley et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned

Attorney Docket Number

612404-430

Examiner Initials *	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
	Number	Kind Code ² (if known)		
	US-5116576		Stanley	05/26/92
	US-5125748		Bjornson et al	06/30/92
	US-5126022		Soane et al	06/30/92
	US-5139637		MacConnell	08/18/92
	US-5143854		Pirrung et al	09/01/92
	US-5151165		Huynh	09/29/92
	US-5151180		Hu et al	09/29/92
	US-5161165		Zorabedian	11/03/92
	US-5164319		Hafeman et al	11/17/92
	US-5166063		Johnson	11/24/92
	US-5194133		Clark et al	03/16/93
	US-5200051		Cozzette et al	04/06/93
	US-5202010		Guzman	04/13/92
	US-5202231		Drmanac et al	04/13/93
	US-5209831		MacConnell	05/11/93
	US-5217593		MacConnell	06/08/93
	US-5219726		Evans	06/15/93
	US-5227265		DeBoer et al	07/13/93
	US-5229297		Schnilpelsky et al	07/20/93
	US-5234566		Osman et al	08/10/93
	US-5242797		Hirschfeld	09/07/93
	US-5269931		Hu et al	12/14/93
	US-5296114		Manz et al	03/22/94
	US-5296375		Kricka et al	03/22/94
	US-5304487		Wilding et al	04/19/94
	US-5312527		Mikkelsen et al	05/17/94
	US-5340449		Shukla	08/23/94
	US-5344535		Betts et al	09/06/94
	US-5376249		Afeyan	12/27/94
	US-5382511		Stapleton	01/27/95
	US-5393401		Knoll	02/28/95
	US-5427664		Stoev et al	06/27/95
	US-5427946		Kricka et al	06/27/95
	US-5433819		McMeen	07/18/95
	US-5434049		Okano et al	07/18/95
	US-5436129		Stapleton	07/25/95
	US-5445525		Broadbent et al	08/29/95
	US-5445934		Fodor et al	08/29/95
	US-5451500		Stapleton	09/19/95
	US-5464517		Hjerten et al	11/07/95
	US-5468646		Mattingly	11/21/95
	US-5486335		Wilding et al	01/23/96
	US-5489506		Crane	02/06/96
	US-5516698		Begg et al	05/14/96
	US-5527670		Stanley	06/18/96
	US-5567617		Caprio et al	10/22/96
	US-5569367		Betts et al	10/29/96

NOV 10 2003
U.S. PATENT & TRADEMARK OFFICE
Please type a plus sign (+) inside this box → +

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

3

of

6

Complete if Known

Application Number	10/686,440
Filing Date	October 14, 2003
First Named Inventor	Donald E. Ackley et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned

Attorney Docket Number

612404-430

Examiner Initials *	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
	Number	Kind Code ² (if known)		
	US-5587128		Wilding et al	12/24/96
	US-5593580		Kopf	01/14/97
	US-5593838		Zanzucchi et al	01/14/97
	US-5605662		Heller et al	02/25/97
	US-5632876		Zanzucchi et al	05/27/97
	US-5632957		Heller et al	05/27/97
	US-5635358		Wilding et al	06/03/97
	US-5637469		Wilding et al	06/10/97
	US-5653939		Hollis et al	08/05/97
	US-5660701		Gruska et al	08/26/97
	US-5667667		Southern	09/16/97
	US-5681751		Begg et al	10/28/97
	US-5700637		Southern	12/23/97
	US-5726026		Wilding et al	03/10/98
	US-5728267		Flaherty	03/17/98
	US-5744366		Kricka et al	04/28/98
	US-5746978		Bienhaus et al	05/05/98
	US-5750015		Soane et al	05/12/98
	US-5755942		Zanzucchi et al	05/26/98
	US-5766960		Cornell et al	06/16/98
	US-5788468		Dewa et al	05/17/96
	US-5789167		Konrad	08/04/98
	US-5824204		Jerman	10/20/98
	US-5849486		Heller et al	12/15/98
	US-5856174		Lipshutz	01/05/99
	US-5858195		Ramsey	01/12/99
	US-5858804		Zanzucchi et al	01/12/99
	US-5863502		Southgate et al	01/26/99
	US-5863708		Zanzucchi et al	01/26/99
	US-5879632		Demers et al	03/09/99
	US-5882903		Andreyski et al	03/16/99
	US-5891630		Eggers et al	04/06/99
	US-5922591		Anderson et al	07/13/99
	US-5939291		Lowey et al	08/17/99
	US-5958344		Levine et al	09/28/99
	US-6007690		Nelson et al	12/28/99
	US-6013166		Heller	01/11/00
	US-6017696		Heller et al	01/25/00
	US-6048690		Heller et al	04/11/00
	US-6051380		Sosnowski et al	04/18/00
	US-6054270		Southern	04/25/00
	US-6258606	B1	Kovacs	07/10/01
	US-6395489	B1	Stanley	05/28/02



Please type a plus sign (+) inside this box →

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

4

of

6

Complete if Known

Application Number	10/686,440
Filing Date	October 14, 2003
First Named Inventor	Donald E. Ackley et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	612404-430

Examiner Initials*	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T ₈
	Office ³	Number ⁴	Kind Code ⁵ (if known)			
	EP	0228075	B1	Dattagupta et al	04/03/91	
	GB	2247889	A	Stanley	03/18/92	
	JP	3099513	B2	Takeshi et al	10/16/00	
	SU	434985			07/05/74	
	SU	616568		Pankratera et al	07/25/79	
	WO	86/03782	A1	Malcolm et al	07/03/86	
	WO	90/01564	A1	Adams et al	02/22/90	
	WO	95/01559	A2	Eigen et al	01/12/95	

Examiner Initials *	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	ABRAMS et al., Comprehensive Detection Of Single Base Changes In Human Genomic DNA Using Denaturing Gradient Gel Electrophoresis & A GC Clamp, <i>Genomics</i> , 7, 4, August 1990, 463-475.	
	ANAND et al., Pulsed Field Gel Electrophoresis, <i>Gel Electrophoresis Of Nucleic Acids-A Practical Approach</i> (2 nd Ed, IRL Press), 1990, 101-123.	
	ANDERSON et al., Quantitative Filter Hybridization, <i>Quantitative Filter Hybridization: A Practical Approach</i> , 1985, 73-111.	
	BAINS, Setting A Sequence To Sequence A Sequence, <i>Bio/Technology</i> , 10, July 1992, 757-758.	
	BARINAGA, Will 'DNA Chip' Speed Genome Initiative, <i>Science</i> , 253, September 27, 1991, 1489.	
	BEATTIE et al., Genosensor Technology, The 1992 San Diego Conference: Genetic Recognition, 1992.	
	BELTZ et al., Isolation Of Multigene Families & Determination Of Homologies By Filter Hybridization Methods, <i>Method In Enzymology</i> , 100, 1983, 266-285.	
	BROWN et al., Electrochemically Induced Adsorption Of Radio-Labelled DNA On Gold & HOPG Substrates For STM Investigation, <i>Ultramicroscopy</i> , 38, 1991, 253-264.	
	BURNS et al., An Integrated Nanoliter DNA, Analysis Device, <i>Science</i> , 282, 5388, October 16, 1998, 484-487.	
	CONNER et al., Detection Of Sickle Cell β3 Globin Allele By Hybridization With Synthetic Oligonucleotides, <i>Proc. Natl. Acad. Sci. USA</i> , 80, January 1993, 278-282.	
	DRMANAC et al., Sequencing Of Megabase Plus DNA By Hybridization: Theory Of The Method, <i>Genomics</i> , 4, 1989, 114-128.	
	DRMANAC et al., DNA Sequence Determination By Hybridization: A Strategy For Efficient Large Scale Sequencing, <i>Science</i> , 260, June 11, 1993, 1649-1652.	
	EGGERS et al., Biochip Technology Development, Biochip Technology Dept, TR 901, Biochip Technology Dept., Lincoln Lab, November 1990, 1-56.	
	FIACCABRINO et al., Array Of Individually Addressable Microelectrodes, <i>Sensors & Actuators B</i> , 18-19, 1994, 675-677.	
	FLEXCON '96 Technical Society Program, 1996.	

NOV 10 2003
10/19/03
Please type a plus sign (+) inside this box →

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

IRK Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

5

of

6

Complete if Known

Application Number	10/686,440
Filing Date	October 14, 2003
First Named Inventor	Donald E. Ackley et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned

Attorney Docket Number

612404-430

Examiner Initials *	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	FODOR et al., Light-Directed, Spatially Addressable Parallel Chemical Synthesis, Science, 251, February 15, 1991, 767-773.	
	FODOR et al., Multiplexed Biochemical Assays With Biological Chips, Nature, 364, August 15, 1993, 555-556.	
	HOREJSI, Determination Of Dissociation Constants Of Lectin Sugar Complexes By Means Of Affinity Electrophoresis, Biochimica et Biophysica Acta, 499, 1977, 290-300.	
	HOREJSI, Some Theoretical Aspects Of Affinity Electrophoresis, Journal Of Chromatography, 178, 1979, 1-13.	
	JACOBSEN et al., Integrated Microdevice For DNA Restriction Fragment Analysis, Analytical Chemistry, 68, 5, March 1, 1996, 720-723.	
	KAKEROW et al., A Monolithic Sensor Array Of Individually Addressable Microelectrodes, Sensors & Actuators, A43, 1994, 296-301.	
	LI et al., Transport, Manipulation & Reaction Of Biological Cells Using Electrokinetic Effects , Analytical Chemistry, 69, 1997, 1564-1568.	
	MANZ et al., Miniaturized Total Chemical Analysis System: A Novel Concept For Chemical Sensing, Sensors & Actuators B1, 1990, 244-248.	
	MATHEWS et al., Analytical Strategies For The Use Of DNA Probes, Analytical Biochemistry, 169, 1, February 1988, 1-25.	
	PALECEK, New Trends In Electrochemical Analysis Of Nucleic Acids, Bioelectrochemistry & Bioenergetics, 20, 1988, 179-194.	
	RANKI et al., Sandwich Hybridization As A Means For The Detection Of Nucleic Acids In Crude Samples, Gene, 21, 1983, 77-85.	
	SAIKI et al., Amplification Of Genomic DNA, PCR Protocols: A Guide To Methods & Amplifications , (Academic Press), 1990, 13-20.	
	SATO et al., Individual & Mass Operation Of Biological Cells Using Micromechanical Silicon Devices, Sensors & Actuators A21, A23, 1990, 948-953.	
	SOUTHERN et al., Analyzing & Comparing Nucleic Acid Sequences By Hybridization To Arrays Of Oligonucleotides Evaluation Using Experimental Modes, Genomics, 13; 1992, 1008-1017.	
	STREZOSKA et al., DNA Sequence Determination By Hybridization: 100 Bases Ready By A Non-Gel Based Method, Proc. Natl. Sci. USA, 88, November 1991, 10089-10093.	
	WALLACE et al., Hybridization Of Synthetic Oligodeoxyribonucleotides To x 174 DNA: The Effect Of Single Base Pair Mismatch, Nucleic Acids Research, 6, 11, 1979, 3543-3557.	
	WASHIZU, Electrostatic Manipulation Of Biological Objects, Journal Of Electrostatics, 25, 1990, 109-123.	
	WASHIZU et al., Electrostatic Manipulative Of DNA In Microfabricated Structures, IEEE Transactions On Industry Applications, 26, 6, November-December 1990, 1165-1172.	
	WATERS et al., Microchip Device For Cell Lysis, Multiplex PCR Amplification, & Electrophoretic Sizing, Analytical Chemistry, 70, 1998, 158-162.	
	WILDING et al., Integrated Cell Isolation & PCR Analysis Using Silicon Microfilter-Chambers, Analytical Biochem, 257, 1998, 95-100.	

NOV 10 2003

Please type a plus sign (+) inside this box →

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

6

of

6

C mplete if Known

Application Number	10/686,440
Filing Date	October 14, 2003
First Named Inventor	Donald E. Ackley et al.
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	612404-430

Examiner Initials *	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	WOOLEY et al., Functional Integration Of PCR Amplification & Capillary Electrophoresis In A Microfabricated DNA Analysis Device, Analytical Chemistry, 68, 1996, 4081-4086.	

Examiner Signature	Date Considered
--------------------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.